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10/538,509	06/09/2005	Kazuhiro Nishikawa	2005_0943A	3164

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EXAMINER	
MA, CALVIN	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,509	NISHIKAWA ET AL.	
	Examiner	Art Unit	
	Calvin C. Ma	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *1-9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/9/2005,10/17/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The references listed on the Information Disclosure Statement filed on June 9, 2005 have been considered by examiner; see attached PTO-1449.

Claim Objections

3. Claims 10-19 are objected to because of the following informalities: the word "past" recited in claim 10 is misspelled it should be changed to "paste". Appropriate correction is required.

The remaining claims 11-19 are dependent on the objected base claim and therefore inherit deficiencies thereof.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a

person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakata et al. (U.S. Patent 6,727,895) in view of Deguchi et al. (U.S. Patent 5,084,107) and further in view of Bottari et al. (U.S. Patent 6,727,895).

As to claim 10, Sakata teaches an analog resistive-film type thin-frame touch panel (10), comprising:

a lower-side electrode member (i.e. the electrode member including 15 and part of wire 31 and 32) having a lower-side transparent electrode (15) on a part of a top face of a lower-side transparent insulating base member (11), a pair of lower-side bus bars (i.e. the part of the wire 31 and 32 that is on the base member 11) disposed on two parallel sides of the lower-side transparent electrode (i.e. the two wire is parallel and on opposite side of the electrode), and lower-side external terminal connection portions (i.e. the part of wires 31 and 32 that is outside of the electrode area) disposed on a portion other than the lower-side transparent electrode and connected to the lower-side bus bars (i.e. since the wire is one piece they are connected to each other) (see Fig. 1,2, Col. 4, Lines 20-60); and

an upper-side electrode member (i.e. the electrode member including 16 and part of wire 33 and 34) having an upper-side transparent electrode (16) on a part of a bottom

face of an upper-side transparent insulating base member (12) having flexibility (i.e. the substrate is said to be flexible) (see Col. 4, Line 44), a pair of upper-side bus bars disposed on two parallel sides of the upper-side transparent electrode (i.e. the part of the wire 33 and 34 that is on the electrode and that are situated on the opposite end of the substrate), and upper-side external terminal connection portions (i.e. the part of the wire 33 and 34 that is not on the substrate) disposed on a portion other than the upper-side transparent electrode and connected to the upper-side bus bars (i.e. since the wire is one piece they are connected to each other) (see Fig. 1,2, Col. 4, Lines 20-60), the lower-side electrode member and the upper-side electrode member being disposed facing each other via an insulative spacer (14) in such a way that the upper-side bus bars and the lower-side bus bars are arranged in a square pattern (i.e. the two substrate and the spacing element are arranged in a square pattern fitting together in a sandwich like structure) (see Fig. 4, Col. 5, Lines 5-35), and being bonded at peripheral portions (i.e. since the touch panel must be made into one piece even though having many components stacked together, it must be bonded on the peripheral region for the entire panel to work properly, where the area outside of electrode 16 and 15 are the bonded region on the substrate 12 and 11) (see Fig. 1), wherein the lower-side bus bars (31, 32) are formed by metal thin wires while the upper-side bus bars are formed by metal thin wires (33, 34), and in each of the upper-side electrode member and the lower-side electrode member, the metal thin wires are respectively fixed onto the upper-side transparent insulating base member and the lower-side transparent insulating base

member (i.e. since the lower and upper side joined together where is thin metal wire conductors 31, 32, 33, and 34 are situated) (see Fig. 2, Col. 4, Lines 53-60).

However, Sakata does not explicitly teach a metal thin wire having a circular cross section and a wire diameter of 30 to 100 μm. Deguchi teaches a metal thin wire having a circular cross section and a wire diameter of 30 to 100 μm (i.e. the copper wire 3 is 50 μm in diameter copper wire) (see Figure 1, 13, Col. 3, Lines 45-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the specific copper wire design of Deguchi in the touch panel system of Sakata in order to, "reduce power loss." (Deguchi Col. 2, Lines 40-47). Note that even though the wiring design of Deguchi is used in the field of solar panel, it is still design to solve the same problem as the touch panel which is to efficiently conduct electrical energy on a semiconductor product.

Further more, the combination of Sakata and Deguchi does not teach a conductive paste. Bottari teaches a conductive paste (i.e. the DuPont 7713 silver/frit paste is used with the Wire trace 56 is applied) (see Fig. 3, Fig. 7 step 100, Col. 4, Lines 52-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the specific conductive paste of Bottari in the copper wire design of Deguchi inside the touch panel system of Sakata in order to achieve, "cost and time saving" but increasing the speed of manufacturing process (Bottari Col. 2, Lines 15-25).

As to claim 11, Sakata, Bottari and Deguchi teaches the thin-frame touch panel as defined in claim 10, wherein the lower-side electrode member further has lower-side routing circuits (i.e. the portion of wiring 81 where the sub-branches meets the main trunk functioning as a routing circuit) disposed on the portion other than the lower-side transparent electrode (i.e. the wiring branch are outside the substrate 71), for connecting the lower-side bus bars and the lower-side external terminal connection portions, the upper-side electrode member further has upper-side routing circuits (i.e. the portion of wiring 82 where the sub-branches meets the main trunk functioning as a routing circuit) disposed on the portion other than the upper-side transparent electrode (i.e. the wiring branch are outside the substrate 72), for connecting the upper-side bus bars and the upper-side external terminal connection portions (i.e. since the both wire 81 and 82 are shown to merge as a single line this must be external terminal connection relay the input signal) (see Sakata, Fig. 10, Col. 12, Lines 23-65), and the lower-side routing circuits are formed from metal thin wires having a circular cross section and a wire diameter of 50 μm and the upper-side routing circuits are formed from metal thin wires having a circular cross section and a wire diameter of 50 μm (i.e. the copper wire 3 is 50 μm in diameter copper wire) (see Deguchi, Figure 1, 13, Col. 3, Lines 45-50).

As to claim 12, Sakata, Bottari and Deguchi teaches the thin-frame touch panel as defined in claim 11, wherein the metal thin wires constituting each of the lower-side

routing circuits and the upper-side routing circuits are extended to outsides of the lower-side electrode member and the upper-side electrode member to constitute the lower-side external terminal connection portions and the upper-side external terminal connection portions (i.e. the portion of wiring 81, 82 where the sub-branches meets the main trunk functioning as a routing circuit the wiring branch are outside the substrate 71, 72) (see Sakata, Fig. 10, Col. 12, Lines 23-65).

As to claim 13, Sakata, Bottari and Deguchi teaches the thin-frame touch panel as defined in claim 10, wherein the lower-side bus bars and the lower-side external terminal connection portions are directly connected and the lower-side bus bars and the lower-side external terminal connection portions are formed from metal thin wires having a circular cross section and a wire diameter of 50 μm (i.e. the copper wire 3 is 50 μm in diameter copper wire) (see Deguchi, Figure 1, 13, Col. 3, Lines 45-50), while the upper-side bus bars and the upper-side external terminal connection portions are directly connected and the upper-side bus bars and the upper-side external terminal connection portions are formed from metal thin wires having a circular cross section and a wire diameter of 50 μm, and the metal thin wires of the upper-side external terminal connection portions and the metal thin wires of the lower-side external terminal connection portions are extended to outsides of a region where the lower-side electrode member and the upper-side electrode member are bonded to each other (i.e. the portion of wiring 81, 82 where the sub-branches meets the main trunk functioning as a

routing circuit the wiring branch are outside the substrate 71, 72) (see Sakata, Fig. 10, Col. 12, Lines 23-65).

As to claim 14, see discussion of claim 10 above, Sakata, Bottari and Deguchi teaches the thin-frame touch panel as defined in claim 10, wherein in the upper-side electrode member, the metal thin wire are fixed onto the upper-side transparent insulating base member via a conductive paste and in the lower-side electrode member, the metal thin wires are fixed onto the lower-side transparent insulating base member via a conductive paste (i.e. the DuPont 7713 silver/frit paste is used with the Wire trace 56 is applied) (see Fig. 3, Fig. 7 step 100, Col. 4, Lines 52-57).

As to claim 15, see discussion of claim 10 above, Sakata, Bottari and Deguchi teaches the thin-frame touch panel as defined in claim 10, wherein in the upper-side electrode member, the metal thin wires are covered with a conductive paste (i.e. the DuPont 7713 silver/frit paste is used with the Wire trace 56 is applied) (see Fig. 3, Fig. 7 step 100, Col. 4, Lines 52-57). and fixed onto the upper-side transparent insulating base member and in the lower-side electrode member, the metal thin wires are covered with a conductive paste and fixed onto the lower-side transparent insulating base member (i.e. since the wires 31, 32, 33, and 34 are each ebbed in the electrode either on top or on bottom the conductive paste will also have to be on the members) (see Sakata Fig. 2, Col. 4, Lines 53-60).

As to claim 16, see discussion of claim 10 above, Sakata, Bottari and Deguchi teaches the thin-frame touch panel as defined in claim 15, wherein a lower-side covering layer formed by being covered with the conductive paste in at least either one of a bend portion of the lower-side routing circuit and the lower-side bus bar in the lower-side electrode member has a width 2 to 5 times larger than a diameter of the metal thin wire in the lower-side electrode member, and a lower-side covering layer formed by being covered with the conductive paste in other portions has a width 1 to 5 times larger than the diameter of the metal thin wire in the lower-side electrode member, while an upper-side covering layer formed by being covered with the conductive paste in at least either one of a bend portion of the upper-side routing circuits and the upper-side bus bars in the upper-side electrode member has a width 3 to 5 times larger than a diameter of the metal thin wire in the upper-side electrode member, and an upper-side covering layer formed by being covered with the conductive paste in other portions has a width 2 to 5 times larger than the diameter of the metal thin wire in the upper-side electrode member (i.e. since the adhesive is shown to be 30 μm on either side of the 50 μm copper wire it is 2.2 times the diameter of the wire and therefore is approximately 3 times the diameter of the copper metal wire) (see Deguchi, Fig. 13).

As to claim 17, see discussion of claim 10 above, Sakata, Deguchi teaches the thin-frame touch panel as defined in claim 10, wherein a specific resistance value of the

metal thin wire is 20 x 10^{-6} Ω cm or less (i.e. since copper wire is define to have 1.70 x 10^{-6} Ω cm resistivity at 50 μm in diameter) (see Deguchi, Col. 4, Lines 10-20).

As to claim 18, see discussion of claim 10 above, Bottari teaches the thin-frame touch panel as defined in claim 17, wherein the metal thin wire on the transparent insulating base member and its periphery are covered with a conductive paste with a specific resistance by using Du Pond 7713 (see Bottari Col. 4, Lines 52-57). It is well known in the art that the silver/frit Du Pond 7713 past is defined by Du Pond to be 3 m Ω/sq at 25 μm which is less than1x10^{-4} Ω cm.

As to claim 19, see discussion of claim 10 above, Sakata, Bottari and Deguchi teaches the thin-frame touch panel as defined in claim 10, wherein a thin-frame of the touch panel is an interconnection region in the upper-side transparent insulating base member and the lower-side transparent insulating base member of the touch panel, in which the bus bars, the routing circuits, and the external terminal connection portions are formed at peripheries of the transparent insulating base members, the region being formed such that its thin-frame width size as seen from an external form thereof is 2 mm or lower at least on three sides (i.e. since Deguchi teaches a copper wire at 50 μm in diameter and Bottari teaches the routing circuits, the bus bars, and the external connection all are formed by the thin metal wire this area would be only 50 μm and less

than 2 mm) (see Deguchi, Col. 4, Lines 10-20, and see Sakata, Fig. 10, Col. 12, Lines 23-65).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Avrahami et al. (US Patent: 6,597,946), Binstead (US Patent: 5,844,506), and Ahn et al. (US Pub: 2002/0090798) are cited to teach similar touch screen electrode designs.

Du Pond 7713 Sliver Feed-through is cited to teach a well-known conductive paste having conductive property that is lower than$1x10^{-4}$ Ω cm.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Calvin Ma whose telephone number is (571)270-1713. The examiner can normally be reached on Monday - Friday 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571)272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Calvin Ma
February 12, 2008

CHANH D. NGUYEN
SUPERVISORY PATENT EXAMINER